ITS Public Safety
PROGRAM
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Recommendations for ITS Technology in Emergency Medical Services

Emergency physicians and other emergency responders call for rapid implementation of new life-saving Intelligent Transportation System (ITS) technologies in a report developed with funding support from the U.S. Department of Transportation's (DOT's) ITS Public Safety Program. The authors assert that these new technologies can save lives on the nation's highways, as well as in terrorist attacks and natural disasters, if brought to market promptly.

The report cautions that life-saving technologies such as telematics and telemedicine must be designed to integrate seamlessly with ongoing EMS operations. Emergency responses can be delayed if dispatchers are overloaded with too much information or if the information is not relayed on 9-1-1 or other priority communication lines, the report says.

Those working in emergency medical services "must be involved long before technology is introduced," said Dr. Jackson Allison, chairman of the medical subcommittee of the Intelligent Transportation Society of America's (ITS America's) Public Safety Advisory

Group (PSAG), which wrote the report.

Technologies discussed in the report include:

- Wireless location technology (wireless enhanced 9-1-1 or wireless E9-1-1);
- real-time, mobile, cross-agency voice and data networks that allow responders from different agencies and units to talk to one another more effectively;
- traffic signal priority and route guidance systems that help move emergency vehicles through ever-more-congested roadways;
- automatic collision notification systems that contact emergency centers immediately upon a vehicle's impact, providing instant location information, and soon also may provide data related to crash severity and likely passenger injuries to both emergency responders and hospitals or trauma centers.

Summary of Recommendations

The *Recommendations* address priority action items for improvement of each link in the "chain of survival" sequence—the sequence of events that must occur to ensure the best possible outcome for victims of traumatic injury, cardiac arrest, and other time-critical, life-threatening situations. Highlights of the recommendations follow:

➤ 9-1-1

- Implement wireless location technology so 9-1-1 can locate callers using cell phones.
- Make wireless telephone service available everywhere.

➤ Prompt EMS Dispatch and Arrival on Scene

- Provide resources to EMS community for new information and communication equipment, including automated location, real-time route guidance, and interoperable, real-time, voice and data networks.

➤ First Aid Before EMS Arrives

- Assure that the first operator answering an emergency call is trained in Emergency Medical Dispatch (EMD) procedures.

➤ Medical Care On Scene and In Transit to Hospital

- Develop technical standards and procedures, and legal and ethical guidelines for telemedicine and advanced Automatic Crash Notification (advanced ACN) systems as soon as possible, to promote rapid implementation of these life-saving technologies.

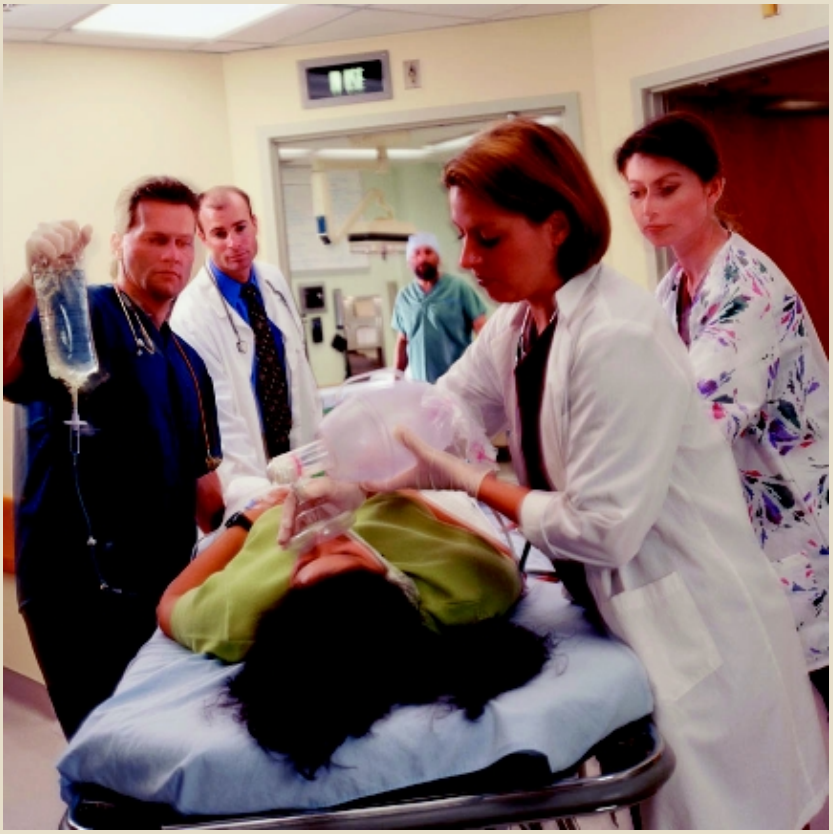
➤ Trauma Center and Hospital Care

- Encourage trauma centers and hospitals to participate in regional emergency response partnerships to focus on implementation of cross-agency interoperable data-exchange and communications networks.

➤ Public Health, Safety and Security

- Integrate ITS technology into existing Emergency Management Systems and form ongoing operational partnerships and real-time communications networks connecting all emergency responders—including, at a minimum, EMS providers, transportation agencies, law enforcement agencies, and emergency management agencies.

PROBLEM	SOLUTION
1 ***Crash victims die due to delay in 9-1-1 calls.*** Single-vehicle rural crashes account for about one-third of all fatal crashes. In many of these (and other) fatal accidents, the fatality occurs because of delay between the time the crash occurs and the time 9-1-1 is called.	1 ***Automatic Collision Notification (ACN) systems*** automatically notify an Emergency Call Response Center when a crash occurs.
2 ***Rescuers can't locate victims who call 9-1-1 on cell phones.*** 9-1-1 calltakers automatically receive location information on calls placed from landline phones, but not from cell phones. Wireless 9-1-1 location technology is available in only a few areas.	2 ***Wireless carriers should move quickly to provide 9-1-1 location technology*** as required under Federal Communications Commission rules adopted in 1996. By 2005, carriers are required to provide location information for all wireless 9-1-1 calls, but progress toward that goal is slow.
3 ***Emergency vehicles are stuck in traffic.*** When emergency medical vehicles are stuck in traffic, medical treatment is delayed and as a result victims may suffer more severe injuries, or die.	3 ***Fleet location, signal priority, and real-time route guidance systems*** enable emergency vehicles to move through traffic and arrive on scene as quickly as possible. Patient outcomes are improved.
4 ***Victims wait for treatment at the incident scene, and in hospitals and trauma centers, until the appropriate medical equipment and personnel become available and are dispatched.*** Delay in treatment can cause unnecessary fatalities and more serious injuries.	4 ***Advanced automatic crash notification technologies*** instantly deliver data that can be used to predict the probable type of injuries and their severity. The hospital or trauma center has more time to call in specialists and prepare operating rooms.
5 ***Victims of mass casualty events are routed to overcrowded or understaffed emergency medical facilities where they wait for treatment, while other nearby facilities in the region have empty beds or superior patient care facilities.*** In incidents involving many patients requiring emergency medical services, the lack of real-time information and communication networks for coordination of patient transport can cost lives.	5 ***Real-time, mobile, cross-agency voice and data communications networks*** enable hospitals to direct the flow of patients so that regional emergency medical resources can be used more efficiently.



CONTACTS

K. Craig Allred
ITS Public Safety
Program Coordinator
ITS Joint Program Office
U.S. Department of Transportation
400 Seventh St. SW
Washington, DC 20590
(202) 366-8034
craig.allred@fhwa.dot.gov

William T. Baker
ITS America
400 Virginia Ave. SW
Suite 800
Washington DC 20024
(202) 484-4540
wbaker@itsa.org

Drew Dawson
Chief, Emergency Medical
Services Division
Office of Safety Programs
Program Development and Delivery
National Highway Traffic Safety
Administration
400 Seventh Street,SW, NTI-123
Washington, DC 20590
202-366-9966
ddawson@nhtsa.dot.gov